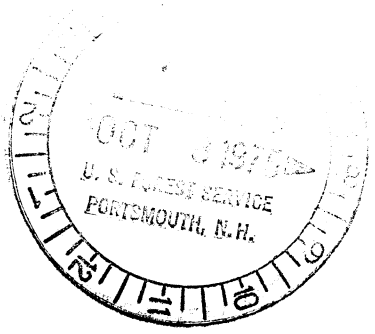

AGENCY OF ENVIRONMENTAL CONSERVATION
Department of Forests and Parks

STATE OF VERMONT

FOREST INSECT AND DISEASE CONDITIONS
Calendar Year 1975

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VERMONT

FOREST INSECT AND DISEASE CONDITIONS REPORT
1975

INTRODUCTION

The information in this report is based on the annual statewide aerial survey made in late August, two special aerial surveys made in early summer and actual field observations. An unusually hot, dry spring and summer created optimum conditions for the development of many forest insects. This same hot, dry weather condition lowered the infectious disease activity, but increased the noninfectious activities such as drought and scorch, especially on shallow, sandy soils where direct mortality occurred.

This year's weather conditions also resulted in an abundance of early leaf color which made aerial detection of light to moderate insect infestations and disease infections very difficult to detect and map.

FOREST INSECTS

Hardwood Defoliators

Gypsy moth, *Porthetria dispar,* populations were very low statewide with noticeable defoliation occurring in only one of the known infestation centers. A 15-acre infest in Northern State Park received 25 to 60 percent defoliation in oak and other associated hardwoods. Although spraying with Sevin by the USDA, Plant Pest Control Division reduced the population, new egg masses are abundant and control measures are planned for next spring. Egg masses in other centers are small in size and number and activity of the parasitic wasp, *Ooencyrtus kuwanai* is readily noticeable.

The forest tent caterpillar, *Malacosoma disstria* activity seemed more widespread this year, but no defoliation was observed. Preliminary egg mass detection surveys shows an upward population trend.

Maple leaf cutter, *Paraclemensia acerifoliella,* defoliation to sugar maple decreased in some of the older areas of infestation but increased dramatically elsewhere. It is currently Vermont's number one insect problem. Overall, 31,085 acres of defoliation were mapped during the aerial flight. Many maple stands and sugar bushes have received four or more years of heavy defoliation and coupled with this year's drought, are in a critical state. Efficacy tests of Carbaryl and *Bacillus thuringiensis,* were conducted in preparation for future suppression programs. A 40-acre sugar bush in Bakersfield and a 25-acre bush in Quechee were aerially sprayed with Sevin 80 sprayable. A high percentage of larval mortality and foliage protection was achieved. Thirty trees in a Morrisville sugar bush were sprayed by backpack mist blower with Nutrilite Biotrol XK wettable powder containing 7500 international units per mg. of product. Test results were very promising and will be expanded to aerial applications in 1976.

Birch leaf miner, *Fenusa pusilla,* populations remained high and leaf damage to grey birch remained heavy statewide.

Bruce spanworm, *Operophtera bruceata,* activity was reported again in the northeastern part of the state, but was too light to be mapped from the air.

A solitary leaf roller, *Sparganothis pettitana,* caused moderate defoliation of 305 acres of sugar maple in several sugar bushes in Northern Vermont. This is the first recording of this insect in population numbers high enough to cause noticeable damage.

The elm leaf beetle, *Galerucella nanthomelaena,* caused heavy defoliation to elms in hardwood stands and roadside trees in the Champlain Valley.

The large aspen tortrix, *Choristoneura conflictana,* heavily defoliated 11,500 acres of quaking aspen in Essex County. This is the first recording of such a large infestation in the state.

The fall webworm, *Hyphantria cunea,* was prevalent throughout the state, mostly noticeable in roadside hardwood stands.

The following potentially serious defoliators were found in low numbers or not reported this year:

Saddled prominent - *Heterocampa guttivitta*
Green striped mapleworm - *Anisota rubicunda*
Full cankerworm - *Alsophita pometaria*
Spring cankerworm - *Paleacrita vernata*
Linden looper - *Erranis tilliarea*
Maple trumpet skeletonizer - *Epinotia aceriella*

Softwood Defoliators

Spruce Budworm, *Choristoneara fumiferana*, defoliation was light, but widespread throughout the northern part of the state. Shade and ornamental fir and spruce trees were hardest hit. Considerable quality loss to 50 acres of heavily stocked balsam fir Christmas trees occurred near the Canadian Border. Experimental sprayings with Cygon 2E and malathion resulted in good control, IN NORTHEAST
Flights of SBW did not materialize

Red-headed pine sawfly, *Neodiprion lecontei*, infestations occurred widespread in Northern Vermont. This insect was reported in Essex and Caledonia counties for the first time. Population trend appears to be upward.

Introduced pine sawfly, *Diprion similis*; yellow-headed spruce sawfly, *Pikonema alaskensis*; and the larch sawfly, *Pristophora erichsonci*, were found in low numbers.

Larch casebearer, *Coleophora laricella*, defoliation of larch remained heavy in 20 acres of plantation at Mt. Philo State Park. A control program using malathion was conducted in William Putnam seed orchard with good results achieved.

Pine needle midge, *Contarinia baeri*, was responsible for needle droop and fall on 60 acres of scotch pine plantation in Bakersfield. This resulted in defoliation, especially to the terminals, some of which were completely devoid of needles by mid-August.

Pine bark aphid common VT.

Balsam gall midge, *Dasineara balsamicola*, caused 30 acres of moderate to heavy defoliation in a Christmas tree plantation in Cabot and appears to be increasing in other balsam fir plantations in Northern Vermont.

Aphid and Scale Insects

Beech scale-Nectria complex *(Cryptococcus fagi - Nectria coccinea* var. *faginata)*: Heavy beech mortality due to this complex can be found statewide wherever beech occurs in any quantity. This complex is Vermont's number one tree killer with the annual loss exceeding 90 million board feet. One 12" tree/acre on large sawtimber stands

Balsam woolly aphid, *Adelges piceae*, populations remained stable from last year with approximately 18,000 acres infested, most of which is in Northern Vermont. A stable trend is predicted.

Balsam twig aphid, *Mindaras abietinus*, populations appear to be on the increase after a low population ebb in 1974. Light to moderate damage was reported in many balsam fir plantations throughout the state. An upward trend is expected.

Bud, Shoot, and Stem Insects

White pine weevil, *Pissodes strobi*, activity remains high in Vermont with thousands of acres of white pine and norway spruce under attack. Field trials of Malathion, Methoxychlor, and Dimethoafe gave good protection in a white pine stand in Cornwall.

FOREST DISEASES

Stem Diseases

White pine blister rust (*Cronartium ribicola*) infection rates remain at a low level statewide. Only small acreage of high value pine was worked this year.

Dutch elm disease, *Ceratocystis almi*, although primarily a shade and street tree problem is killing elms in forest stands at an increasing rate.

Ash dieback was reported as noticeable throughout Addison County in late summer.

Root Rots

Fomes root rot, caused by *Fomes annosus:* Permanent plot data from Vermont's largest infection center reveal that rate of spread of this fungus in red pine has been very slow. Mortality since the plots were established eight years ago has been confined mainly to suppressed trees.

Foliage Diseases

Lophodermium needle cast, *Lophodermium pinastri*, damage which had been heavy in scotch pine Christmas tree plantations in many areas of the state appears to be less this year. Many growers are spraying with fungicides to protect their investment.

Anthracnose diseases appeared at lowest level in many years as hot dry spring was not condusive for infection.

Environmental and Unknown - Noninfectious Diseases

Spruce continues to die on large acreage in many sites in Vermont. *Armillaria mellea* fans and Rhizomorphs are present but cause of mortality is still undetermined to satisfaction of many, although many suggestions have been made. This area needs investigation.

Scorch and wind symptoms were common this year as hot, dry winds hit developing leaflets causing leaf damage in many parts of the state.

Drought caused mortality of pines on exceedingly well drained, shallow, sandy soils.

ANIMALS

Mice damage in young Christmas tree plantations, fruit tree plantings, and sugar maple reproduction was severe statewide during the winter of 1974-1975. One 40-acre planting of 30,000 scotch pine trees was completely wiped out while many other plantations received moderate to heavy damage. High value trees on state land sprayed in the fall with Arasan and Rhoptex (1:1:2 parts water) received complete protection from mouse damage.

Porcupine damage is at a low ebb with fewer complaints and requests for assistance. Control work is still available upon request.